

Determination of residual moisture in cyclodextrins**Test method: PML-0701****1. Purpose**

This method describes the determination of the residual moisture (loss on drying) of cyclodextrin production lots.

2. Equipment

The following equipment is needed:

Infrared drier (e.g. LP 16, Mettler, D-Gießen) with analytical balance (e.g. PM 100, Mettler, D-Gießen) and printer; disposable aluminum dishes.

3. Chemicals

4. Analysis

At first the necessary parameters for the analysis are adjusted on the infrared drier:

heating temperature: 120°C (248°F)

measuring range: 0....-100%

mode: ../30 (end of measurement if loss in weight < 2d/30 sec)

An empty and clean aluminum dish is placed on the receiving part of the drier, the cover is closed and the balance tared by pressing the operating key shortly. After appearance of the 0-value, the dish is taken out and 1-2 g of the sample (in no case less than 1 g) are spread homogeneously on the dish. The dish is placed again into the drier and the "Start"-button is pressed. The analysis is done automatically until the adjusted value (decrease of weight < 2digits/30 sec) is reached. At the end of the analysis the determined value is given out by the printer directly in %.

5. Calculation

The analysis of the residual humidity is done twice. The mean value of the two analysis values is used as the final value.

6. Remarks

The determination of the residual moisture of cyclodextrins according to this method was compared many times with the usually used Karl-Fischer-titration. The difference between these two methods is very small (usually lower than 0.2% absolute). Therefore the determination of the residual moisture of cyclodextrins by the above described method has superseded the Karl-Fischer-titration in our laboratory.

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This method is also suitable to determine the dry substance content of aqueous cyclodextrin solutions. In this case the solution has to be spread evenly over the aluminum dish.

The method is not suitable for substances which degrade within the used temperature range (20-120°C or 68-248°F) or contain volatile flammable components.

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